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The Management of a Veterinary Practice

DISCUSSION BY THE CENTRAL VETERINARY SOCIETY

Mr. F. BECKETT: I will attempt to describe how I have tried to run my practice for 20 years—the time I have been qualified. Great changes have taken place in veterinary practice during the past 15 years and particularly the last ten years.

I was attracted to the profession after coming out of the Services because I liked country life and moreover riding and a country practice appealed to me. It was a grand sort of life but in the last ten years things have changed considerably and to me as an individualist not altogether to my liking. The Ministry have taken over a great deal of the control of disease in country districts, and to a great extent they must of necessity interfere with us, and our practices are governed to some extent by their requirements.

The organization of a practice must be considered very much from the type of country in which one lives, the type of man who is running it and the distances to be covered. Another point which has to be decided is whether or not you wish the practice to be centralized or whether you prefer a number of branch practices scattered over a wide area. I dislike branch practices. I prefer centralization because if one has three or four men working together it makes for greater efficiency. There are many advantages in having the men centralized. First of all, buying is centralized—drugs, instruments and the like—and in my practice one man has sole charge of the purchase of instruments, drugs and checking up of invoices. That enables me to keep a close eye on what is happening. Another advantage of being centralized is that one can have a rapid interchange of people on various jobs without too much dislocation. Another point, probably the greatest point in favour of centralization, is that it is so much easier to go into a huddle and discuss cases and worry out difficult problems that arise from day to day. That I think the most important of the lot.

Another point that must be raised at this juncture when dealing with centralization is the fact that it is quite easy to arrange free time. I have a system by which a roster is arranged for the month and each man knows exactly when he is off and what length of time. It means that each man has every third evening off and every third Sunday. That I think is a big feature in any practice, because one thing which is inclined to kill enthusiasm is the infernal business of never being able to make private arrangements and never being able to get away from the telephone and so on. I find those working in my practice are much happier and more contented when they know exactly what free time is allocated and that their personal arrangements will not be interfered with.

The internal arrangements of running a practice are very important. I have a secretary who deals with all letters, correspondence, filing, making appointments and work of that sort. At the end of each day the work for the following morning is arranged and allocated and I always endeavour to have one man spare for emergency cases.

The method I use in the surgery in dealing with cases from day to day is somewhat primitive but it works. I have a rough note book in which all cases are entered as they come in—the secretary makes the note. If I come in and find two or three cases waiting I tick off in the book those I intend to deal with. Others coming in see at once which cases are dealt with and that gives the next man in from the round the chance of dealing with anything outstanding. That again is ticked off. At the end of each series of visits each man as he comes in enters up cases at once in a day book. It is done roughly in pencil, but he enters everything—where he has been, what he has done, medicine left and medicines posted. Later that is entered in the ledger by the secretary. My partner deals with the whole of the pricing, the ordering of drugs, and he checks invoices. I take over the invoices passed by him and pay them. The day books are entered up from day to day, the pricing is done day by day, and the totals are brought up-to-date day by day. Our expenditure is entered week by week and my accounts are paid, with the exception of one or two, within seven days. I have an arrangement with most firms by which I get so much per cent. for cash within seven days.

By entering up things in that manner it means that when I go through the day books and ledgers—I deal with it on one night in each week—I know our expenditure to date, our turnover to date, money received to date, and can check it with the same day last year, so I have a good check on what is happening and know precisely whether there is an increase in turnover, whether our expenses are heavier, or whether we are falling back. I do not think it is possible to run a practice successfully without such checks. As far as drugs are concerned, in my practice it is a standing rule that anybody can order what drugs he likes. Nobody is tied down to any particular line of treatment and any assistant with new ideas orders what he wants, and the only onus on him is to report to my partner that he wants so and so and he gets it. Furthermore we endeavour at all times to prescribe a definite prescription for every case we deal with. I do not like humbug. If a practice is to run successfully the basic principle is service to your people and, therefore, I believe that when one purchases drugs and makes prescriptions one must buy the best. The question of books and booking I think is the most tedious of the whole business and most practitioners agree that the hardest job is to make people enter things up completely. I am as guilty in this respect as anybody. If a man forgets to write down the particulars and he is off for the day, the man who deals with the case in his absence knows nothing of what he has done and what medicine he has given.

Mr. D. S. S. NICHOLSON: In my view just as the profession is organized not only for its own advantage and protection but also for the general benefit of the community, so an individual practice is organized both for the advantage of the owner of it and for the benefit of the local community in which it is situated. Thus the efficiency of the organization of a practice must be judged not only by the income it produces for its owner and the way of life it allows him to lead, but also by the efficiency of its service to the clients. The aim should be to provide an adequate and respected service at fees which are economical to the farmer in relation to the job done.

The distribution of practices, that is to say, their position in the countryside, is for the most part related to a state of affairs when the range of diseases which could be successfully treated was very much more limited than it is to-day. In many cases their location was ideal at the time when horses were the chief and most important animal to be treated. But this position no longer holds good. Over the greater part of the country the horse is now of very subsidiary importance. In any case the effect is that over large areas practices are scattered haphazard and rather thinly.

The result of this state of affairs commonly leads to one of two things. On the one hand the old-fashioned methods of practice can still be followed, that is to say, only a proportion of the cases of ill health are catered for, those of the more desperate and violent nature. The remainder are ignored and sometimes even no attempt is made to deal with them. The types of case of which I am thinking are those associated with the bovine udder and uterus. That such an absence of suitable service exists is shown by the need for the appointment of such people as the Ministry's sterility officers, who in some parts of the country do a considerable amount of treatment of individual cases because the local veterinary surgeon cannot or will not do it, and there are other advisers on livestock health and ill health, some of them veterinary surgeons, some of them not. This older type of practice may provide a good living for the veterinary surgeon, but it cannot give a service as adequate as is scientifically desirable, or be of maximum benefit to the community. More commonly, however, the practice does develop so as to be able to deal with all the new types of cases which are presented. A principal, or several partners, work from a common centre, often employing several assistants. Such a practice is prepared to deal with every manifestation of ill health, using the most up-to-date methods and appliances. Very often such a practice can provide specialists for certain conditions. I should here like to say a word or two about specialization as applied to general veterinary practice. The amount of genuine specialist work to be done is, I believe, very small indeed. Except for a few

[The discussion reported below took place at the meeting of the Central Veterinary Society held on December 6th, 1945, at the Conway Hall, W.C.1, the openers being Mr. F. Beckett, of Blandford, and Mr. D. D. S. Nicholson, of Wells.]

types of cases the ordinarily competent veterinary surgeon should be able to undertake them all. However efficient these multimen practices may be I do not consider that they can be said to give an adequate and complete service to the community. The reasons for this are twofold. Firstly, the service provided must almost invariably be an impersonal one. Different veterinary surgeons are likely to turn up on a farm for different cases, or for series of visits to a case; the farmer never knows who is coming next and as soon as he gets to know one man he leaves and another takes his place. This factor is, I believe, a very real deterrent in the fuller employment of veterinary surgeons, especially among the smaller and less well educated farmers. Secondly, there is the problem of big mileages. This acts in various ways. Long distances are the quickest way of piling up overheads, not only because of the expenses of motoring, but also because each individual veterinary surgeon spends so long motoring and so can do fewer cases per day. I have found, too, that beyond a certain distance farmers will not send except for emergency cases. I have a client about 14 miles away, an enterprising farmer-dealer type, with a T.T. herd; he is on the Panel Scheme. The other day I was on his farm for something else when he showed me a cow which had lost a quarter from mastitis. I asked him why ever he had not let me have a try to save it. He said: "I didn't like to bother you about a little thing like that," and yet this man is paying me to come and deal with his cases of mastitis. It would only have cost him a 'phone call to have got me to see this cow. If this state of affairs exists in a panel herd you can see what a handicap a big mileage is in the provision of an adequate veterinary service.

I consider that what the average farmer looks for in the way of a veterinary service is, first and foremost, to have someone or at most two people whom he knows personally. It is not until you have been to a farm several times that you are likely to get the full co-operation of the farmer and his men. Secondly, the veterinary surgeon must be fairly near at hand. No matter how well you know your farmer he will not send any great distance for you except for major disasters. We have had an example of this. One of my partners was doing a certain amount of work in an area 12 miles from where he lived. We put an assistant to live in that district and we found that in the first year he did approximately twice as much work for those same clients. If a veterinary surgeon confines himself to a fairly small area he will reduce his expenses and can cover the ground more intensively. By so doing the work can be organized more economically. There are fewer emergencies to upset a plan of work which has been previously arranged and it is easier to make routine visits to an area at recognized times. If farmers know when to expect you in their district they will save up minor jobs and show you quite a number of things which they would never think it worth while to get you to come to at a special visit. There is a good deal of talk nowadays about preventive medicine and really when you come to think about it the prevention of disease consists very largely in attending, treating and advising on minor things. Incidentally, a recent announcement by the Ministry that they would only pay mileage in excess of 12 miles "in exceptional circumstances" shows that they, too, are thinking on similar lines. It is, I think, the lack of this easily available veterinary service which has been the cause for the presence of quacks. The quack has played a useful part in doing much work which veterinary surgeons did not, or could not, do at a fee which the farmer considered economic. In some cases, of course, not even a quack has been available and the farmer has had to do as best he can himself, or more commonly perhaps nothing is done.

It is agreed, I think, that in general country practice a one man practice leaves much to be desired from the point of view of the veterinary surgeon. If he is conscientious he is hopelessly tied to his practice, and generally speaking, he is unlikely to ask for help with operations and so on save in exceptional circumstances. What remedy is there, then, which will provide this personal near at hand service and at the same time give the veterinary surgeon a chance to lead a near normal life?

The type of organization which I suggest can deal with both sides of the picture is one in which the principal and his assistants, or the partners, do not live at the same centre, but are spaced out over the area of the practice. Each member of the practice is thus associated with a particular area in the practice and the farmers there know him as their veterinary surgeon. Each member is responsible first of all to himself and can develop his own individual tastes. Each member of the practice is, however, part of the whole and all owe allegiance to each other. It should help to remove some of this cut-throat competition of practice which was so affectionately mentioned in *The Veterinary Record* a little time ago.

From the point of view of the principal or partners of this type of practice, it should lessen their more direct responsibility to their clients, and I believe reduces the burden of overheads; financially it seems satisfactory.

From the point of view of the young veterinary surgeon this type of practice should have advantages. It offers him far more independence of action and responsibility than in a centralized practice and a job with a future. In the past so many assistants' jobs have been a dead end. I consider that every member should have a percentage interest in the success of his part of the practice. It can also encourage and reward economy. The expenses in a large centralized practice are in any case so huge, there is so much money coming in and going out, that the economies or extravagances of any individual will make very little difference and will be equally unnoticed. Holidays, and the now fashionable "leisure" time can be provided nearly as easily as in a centralized practice. As you get a higher proportion of the total cases of ill health treated in an area there will develop a need for more veterinary surgeons. They will have to be thicker on the ground and this seems eminently desirable.

From the point of view of the client it provides what I believe he most wants, namely, a known, easily available veterinary surgeon with inexpensive second opinions and help for operations.

It is well known that recently both Houses of Parliament and the National Farmers' Union have many times deplored the inadequacy of the veterinary service that is at present provided. The Ministry of Agriculture have made this inadequacy an excuse for not going forward with various schemes which are generally recognized as desirable. Some such scheme as I have outlined seems to me to be a way of providing a better service, allowing that we have the personnel to do it. It is, I suggest, reasonable to fear that if we do nothing to change the existing state of affairs we may find things changed for us, and in a way we do not like.

General Discussion

Mr. T. L. Wright: They had heard divergent views, one on centralization and the other in favour of spreading around the country. His own view was that a large practice tended to become a Frankenstein. If someone dropped out usually the principal bore the brunt. Another difficulty was the lack of continuity of assistance. Clients got used to an assistant—it might take two or three years—and then when he wanted to branch out in another direction it meant a fresh start with a new assistant. In his view a practice did best when it could, more or less, fully occupy two people most of the day, and if one had one resident close to headquarters and another a little further away, with a secretary-receptionist-bookkeeper during the day to take 'phone messages, book up everything entered the previous day and to attend to the accounts, it should be possible to arrange that each partner could have one week-end free from midday on Saturday until Monday and one full week of evenings from 7 p.m. When he was able to run that system he found it most satisfactory. Clients knew both the veterinary surgeons well and were prepared to have either one, and each knew closely what the other was doing. When a practice was developed to something bigger it was difficult to keep that personal contact with clients which was of such great value.

Mr. H. Stainton: He believed in centralization and concentration of practices. He had had experience of London practice and started as assistant and then became a partner with the late Sir Frederick Hobday. In those early days there were three of them and at one time four. It was a large practice carrying large expenses—but things were now more concentrated and, with less expense and more system, net profit did not appear to suffer. He believed it paid to concentrate on a smaller practice and do it well.

As regards neighbours, he saw no reason why neighbouring practitioners should not work as neighbours in friendship to help each other. He had a number of good neighbours and he hoped and believed they were very good friends—ready to do a job one for the other. If you had that sort of spirit, you could be away for short periods with the feeling that things were not being neglected and that someone would do the work for you.

He did not think a one-man practice was good, however, because he got no real relief. There should be at least two and if you worked together as good partners you could split up the time—alternate evenings, Sundays or week-ends—with better service to yourselves and your clients.

Mr. J. B. White: He thought the present-day trend was toward centralization of practice; each practice supporting several practitioners. This appeared to be happening all over the country. There were several advantages of centralization, including the pooling of ideas between the members of the practice and the provision of some spare time for the individual.

He was also certain that by interchange of ideas the principals gained in knowledge from both assistants and students in a way which helped to keep them abreast of modern teaching, while the assistants and students in their turn gained in experience.

Mr. G. N. Gould (President, N.V.M.A.): He agreed with Mr.

Beckett that a centralized practice was likely to be more satisfactory than a decentralized. It demanded a large capital outlay if it was to have full facilities for efficient service. The cost of premises, adaptation of premises, equipment, drugs, transport and the necessary lay staff was very considerable. He believed that branch practices tended to lose the personal touch which, within a centralized practice, could be more easily maintained, as it facilitated contact with the principal. It was advisable that anyone employing an assistant should, in both their interests, take him round or send him with a colleague over a period, to get used to the district, the methods used and the clients he was likely to meet. There was less likelihood of lack of continuity provided the assistant was given a future. The assistant could not be kept indefinitely on his initial salary, but must be able to achieve a reasonable peak salary, by regular increments, have time off, and reasonable facilities for working, and encouragement to concern himself with any branch in which he was particularly interested. He was sure many large practices could provide veterinary surgeons working as assistants with better financial return and working conditions than could be achieved by practising independently.

Booking was a problem—the system he used resembled that of Mr. Beckett—one large day book in which all bookings were made: record name, address, visit, diagnosis and treatment. All bookings were expected to be completed the same evening. This enabled the principal to keep a check on cases daily. Pricing was done in the office the following morning. The office staff's duties included accounts, orders, weekly stocktakings, correspondence and complete records of cases. All day book entries were transferred to loose leaf files so that services rendered for a client over a period could be easily looked up and accounts rendered with reasonable ease. Herd records, panel records and kennel records were kept as efficiently as possible. Allocation of work was carried out by the principal, who gave the work to the man he considered most capable for the purpose and time, and tried to keep assistants to a regular routine of clients in a regular area. Each member of the staff left a list of cases he was visiting and the order of procedure, and indicated the approximate time he expected to be at certain clients. As fresh cases came in during the day one of the clerks contacted the assistant nearest and in that way saved time and mileage. Each assistant was provided with drugs and equipment in his car adequate to cope with anything except a major operation. During the war his practice was practically all country, but was now rapidly reverting to a normal mixed practice as before the war, with agricultural demands predominating. The small-animal practice had morning and evening surgeries at set times and surgery cases were not seen except in emergency outside these set times. The work was carried out on a rota—the arrangements broadly being, morning one day, evening the next. Each assistant had regular time off, alternate evenings, half a day a week, a full Sunday once a month, and every third week-end from Friday midday to Monday 9 o'clock. Reasonable time off was given for private purposes, subject to notice, and usual time off at Christmas, etc., on rota, and a fortnight in the summer. He felt that centralized practice was likely to be the system of the future, in view of need for capital outlay and rising overhead cost of modern practice. He believed now that anyone working in a practice and intending to stay should have a percentage interest in it, but devising a satisfactory scheme was not too easy, although he was having one worked out for him at the present time for trial. From the principal's point of view, he must say that unnecessary wastage and breakages were vastly increased when one employs assistants, who should bear in mind that it needed large capital outlay to provide them with their post, with continuing overhead costs. In his practice the latter were about 66 per cent. The hard use of cars was a phenomenal source of expense, but that was likely to occur whether a practice was centralized or decentralized. It had been accentuated by the poor quality of second-hand cars available during the war and inability to obtain skilled repair services, or, in fact, servicing of cars. Before the war a mechanic was kept to service and repair cars and cars were changed for new ones every 12 to 18 months. Transport costs were then much lower than they were to-day. During the war costs had risen three to four times. With full co-operation and appreciation of the responsibilities involved on either side, by principal and assistants, he felt sure that team work within a centralized practice could provide a very efficient and satisfactory service to the public.

He tried putting certain staffs on small-animal practice alone, but found it difficult during the war to find anyone willing to do only small animals. He was not sure that it was desirable from the point of view of the clients or of the practice. It tended to cause "complexes" and from the administration point of view could be very troublesome. He believed that small-animal practice was the finest training ground for clinical observation, diagnosis and surgical technique. Young assistants in his practice commenced mainly on surgery and local cases and worked under supervision for a varying period. He did not believe that it was in their interest, or in the interest of the practice, to restrict them entirely to small-animal work. There had been a tendency during the war to minimize the importance of small-animal practice. That part of his own practice almost disappeared during war-time, but was now almost pre-war. The experience referred to by one speaker, of too much Ministry work, was exceptional. It rather tended to give a false impression if it was accepted as the general situation throughout the country. The vast majority of practices could do with more Ministry work, but there were comparatively few which would prefer less.

Miss J. O. Joshua: They had heard a good deal of detail on organization, but they had only heard Mr. Nicholson on the point that the veterinary practice must be organized in the interest of the community. So far it seemed the other way round: "How best to organize for ourselves." They had got to consider seriously in the future how practice should be organized to the best advantage of the community in the type of district they had to serve. She could speak only of small-animal practice in urban areas and here she was in favour of limiting the area one served. After all, one entered into a contract with the animal owner to supply as efficient service as was possible in return for reasonable fees. She did not believe that this efficiency could be maintained if the practice covered too wide an area. She was not impressed by the boasts one sometimes heard of cases being seen at considerable distances from the surgery; to her mind practitioners who had the time to go those distances could not have a busy local practice. She also believed that one was at liberty to decline to enter into a contract to attend any particular client and she personally refused to see people from other districts; she was not flattered by these calls since such people had usually been dissatisfied with their local practitioner and were therefore unlikely to be satisfied with her. She made an exception of cases in which one had, should she say, a specialist interest—these might reasonably be accepted from any distance if desired. Furthermore, it seemed to her economically more sound to do several visits within a radius of, say, three miles from the surgery, rather than one visit at seven miles distance; in the latter case it was usually not possible to charge a fee commensurate with the time spent. She should also like to make a plea that in any future organization there should be a little more free discussion of actual fees and the net financial results to themselves. It was very confusing, in concentrated small-animal districts, to have great deviation in range of fees. As far as students were concerned during training, one found that they had very little idea of what it was reasonable to charge for certain routine jobs.

She was speaking of the one man unit and had no views on the arrangements in practices employing a number of practitioners. She thought in small-animal practices the one man unit was as good as any other in serving a strictly limited area.

Her preference regarding assistants was to carry an assistant—a newly qualified graduate—probably for a limited period, largely in the capacity of houseman. You then had someone available for emergency calls. The assistant would get adequate surgical experience and the practitioner would not lose any of the personal touch which was essential in small concentrated areas. On the question of organizing one's practice within itself, she agreed with Mr. Gould on the necessity of seeing clients only during surgery hours. She believed one could expect reasonable behaviour from clients and as one attempted to give reasonable efficiency in one's service so clients could be trained to behave reasonably on their side.

Dr. W. R. Wooldridge: He did not think they had crystallized the problem sufficiently so far. As had been mentioned by most speakers, the prime object in organizing a veterinary practice was to give service to a localized community. In his opinion, it was equally important for the organization to allow the veterinary surgeon to take his rightful place in that community. To do this he must be given time to devote himself to matters outside his practice. After all, every practitioner had to be a citizen as well as a veterinary surgeon, and this meant that he must have reasonable leisure from the constant duties of his practice. With modern knowledge of disease, diagnosis and treatment, it was difficult to give efficient service without the provision of much expensive equipment, both in the surgery and in the laboratory. This meant that the person responsible for the practice had to lock up considerable capital in that practice. This point was not often fully appreciated, and it would seem that it was rare for this capital to be made a charge upon the practice in the sense that stocks and shares in ordinary businesses were expected to receive interest. Owing to the fact that the capitalization of practices was rarely made, their sale was rendered more difficult. This was a hardship which seemed to him to affect the large practices more than the single practices, as it was difficult to find a purchaser who was ready to take over the large practice at its full capitalized value, particularly when that capital was not clearly shown in the books. Capitalization of practices would, it seemed to him, make it easier for the

dependants of a principal who died to receive their interest from the capital which had gone into the practice, often from the combined efforts of the principal and his wife. Such capitalization would also enable assistants who entered a practice to appreciate more readily the care and trouble with which the principal had built up the practice in its earlier days, and would emphasize that such investment deserved a reasonable financial reward, such as would be obtained if it was interpreted in terms of shares in the concern.

On the question of leisure—a matter which he regarded as highly important—this would not seem possible in private practices unless arrangements were made for the collaboration with the assistants of more than one veterinary surgeon. This might be effected, in the way proposed by Mr. Nicholson, by the establishment of complete confidence and co-operation between neighbouring practitioners with small practices. On the other hand, provided the practice was able to carry assistants, it obviously became easier to arrange regular leisure periods, including reasonable holidays, for individuals in the practice when the number of veterinary surgeons was rather large. The point made by Mr. Nicholson that the single-handed practice was the only way of securing the personal contact between the practitioner and farmer, which the farmer wanted, was, he thought, not entirely true. He had been in various large practices, and had had the opportunity of meeting many of the farmer clients in these practices, and from conversation with them he had realized that they were clients of large practices mainly because they had such confidence in the principal of that practice. Although they readily accepted other veterinary surgeons in the practice for their work, they knew that in case of need they could always call upon the assistance of the principal. Indeed, there were, undoubtedly, large veterinary practices that were extremely personal in character. Another criticism of large practices which he did not think was justified had been made by Miss Joshua. She alleged that it must be uneconomic to run practices extending large distances from the surgery, because of the distance between the surgery and the outlying clients. This might appear to be so at first glance, but with proper organization it obviously was not necessarily so, for it was possible to arrange rounds including visits to distant clients with calls at various points on the journey. It was also possible for contact to be made in case of urgency with the practitioner doing this round, provided approximate times of call upon clients and their telephone numbers were left in the surgery. The economy of distances was dependent upon several things, but it was obvious that it depended in the main upon the average distance between any two clients on a round, rather than upon the distance of the furthermost call from the surgery. He had previously referred to the need for ancillary services to a veterinary practice, such as laboratory assistants, X-ray diagnosis, surgical assistants, as well as work connected with the care of animals. If the greatest value was to be obtained from the highly skilled services of the veterinary surgeon, these ancillary services should be conducted under his supervision by technical assistants. Indeed, in a busy practice, it seemed to him a waste of time for the veterinary surgeon to be responsible even for the preparation and sterilization of surgical equipment and for its subsequent cleaning. In many practices, the importance of lay assistance was appreciated, particularly in so far as secretarial and kennel staff was concerned, but he believed that the time was not very far off when farmers would demand nursing assistance for the treatment of their animals. It was appreciated that it was becoming increasingly difficult for farmers to secure the labour to look after animals even in health: it would be more difficult to get them to nurse sick animals satisfactorily, and they might find, before long, nurses for farm animals going round farms carrying out the directions of the veterinary practitioner. Another point in favour of practices being grouped together or containing a large number of veterinary surgeons was the growing need for specialization. This again, he believed, was a development which was bound to go on to some extent in the sense that although the practitioner would continue for many years to treat all animals, he would tend to specialize in the management of the ailments of a particular species. Whatever their views were as to the future of veterinary practices, it was clear from that day's discussion that business organization was becoming more and more important to its successful prosecution, and that central hospitals or surgeries offering equipment and lay staff to a number of surrounding practices could play a useful part in this organization.

Mr. S. F. J. Hodgman (Chairman): He was personally inclined to think that the question of centralization or decentralization depended entirely on the district one was working: in any case, he thought centralization the better. Regarding the question of giving percentages to their assistants, he heartily agreed, and would carry it a step further and give it to their lay assistants. It might be only a small percentage, but it meant a lot to them and certainly paid the principal in the saving of overheads, cotton wool, bandages, bottles, lights and other things: he found that it paid.

The Replies

Mr. Nicholson: Mr. Wright talked about good assistants always moving, but Mr. Gould answered that by saying that if one gave the right salary they would not move but would stay, provided the other conditions were satisfactory. He thought if you gave them that, you got a better type of assistant and more choice. Where you had a number of assistants not involved in the practice on a percentage or bonus, he thought it was inevitable for them to regard it as an impersonal thing. Some assistants only wanted to go to a practice to pick up what they could and then go elsewhere, and he did not think that type of assistant would do much good to the practice. He felt that Mr. Gould overstressed the expenses and overheads. He disagreed. He was speaking of cattle practice and he did not think in a cattle practice one needed elaborate equipment: one did not need X-rays, for instance. Mr. Gould talked of the vast amount of capital used in equipping a practice so as to be reasonably efficient, but he found in a large-animal practice it was not necessary. He still thought those people who uphold the centralized practice had side-stepped some of the services to their farmers. He imagined that if their overheads were high then their fees were high, and if their fees were high farmers would not employ them for the small things. It struck him that the small jobs could only get small fees and if an animal was only worth shillings farmers were not going to pay a lot for treatment—and he did not blame them. A good deal was said about the advantage of those in centralized practices meeting each other and hearing each other's views, but whether centralized or not they met for discussions, used the telephone, and also met when operating. They had students, just as did the centralized practice, and they could get their views and profit by them. Mr. Gould had said that administration was heavy in the decentralized practice. They found that administration was in fact easier because each individual was responsible for his own day to day problems.

Mr. Beckett: He stated at the beginning that service was of paramount importance in arranging and organizing a practice and he believed those of them who were running big practices did not run them because they were failures but because they gave not only service but good service. He ventured to say that it was Miss Joshua's lack of knowledge of country practice that made her suggest that they did not give the requisite service or have sufficient interest in their clients. He thought country practitioners in the main were extremely conscientious and farmers were pretty critical of what they did.

Much had been said about the personal element in general practice and he must say that with the passage of time that position had altered. Before the Ministry did any work in a large way the veterinary surgeon was the authority in his own locality on animal disease outbreaks or on conditions dealing with livestock. People always sent for the veterinary surgeon working in the area. When the Ministry appointed divisional veterinary officers in the county with five or six assistant veterinary officers, farmers rapidly got used to a great number of veterinary surgeons visiting their premises because of the advice necessary in operating the various Ministry schemes. They had to appeal to the divisional veterinary officer and got to know him quite as well as the principal in any veterinary practice. Furthermore, they were not constantly visited by the same veterinary officer and he did not think the close personal relationship of client and practitioner did exist to the same extent. The Ministry had certainly eased the pressure on the principal of the concern to a considerable extent and farmers were much more likely to accept an assistant when in the old days they would not have an assistant at any price. To-day education was improved and one man was as good as another and often much better. That was what was happening nowadays, and provided one sent an assistant who was confident and conscientious the farmer was quite happy. He must say he stuck to his guns. Centralization had much more to offer than decentralization. He thought the principal could keep a closer eye on things. They did, as Mr. White had said, get the pooling of ideas all the time. If one was up-to-date in instruments and equipment—X-ray and so on—it was far better than having scattered headquarters. He thought centralization, taking it altogether, was preferable to decentralization.

Weekly Wisdom

The punishment of the liar is not that no one believes him, but that he believes no one.—Anon.

CLINICAL COMMUNICATION

The Mine Detector as an Aid to Detection of Metallic Foreign Bodies in Cattle

Major H. A. CLAY, R.A.V.C.

Officers of the R.A.V.C. serving in South-East Asia Command reported favourably on trials carried out with mine detectors for locating shell fragments in horses and mules. The detector comprises a search unit, a battery and amplifier carried in a haversack, a control box, and a set of headphones. After adjustment, when the search unit is brought near to any metallic body a ringing note is heard.

It occurred to the writer that as the instrument was sufficiently sensitive to indicate the presence of small shell fragments buried four to eight inches deep in muscle, there was a possibility of its useful application in cases of traumatic gastritis, etc., in cattle. A mine detector was therefore obtained on loan, and the following limited trials have been carried out:—

Trial I.—The subject was a roan Shorthorn cow, three months after her second calving. She was reported as off her feed and the milk yield down. When seen she appeared dull, ruminal movements were restricted and the contents hard; temperature and pulse were normal. Some pain was shown when pressure was applied to the sternum with a broom handle. A saline purgative was given and the owner instructed to put the cow "on the boards." At the second visit two days later the cow was little changed; she was still not eating and seemed less comfortable. Increased pain was shown in the sternal region; the temperature was slightly elevated, 103·2° F.

The mine detector was tried and a ringing note was heard on the left side in the sixth intercostal space, slightly behind and below the point of the elbow.

Rumenotomy was performed the following day, and a piece of fencing wire 3 in. in length was recovered from the antero-ventral aspect of the reticulum. The wire was embedded so that only 1 in. remained projecting into the reticulum.

Trial 2.—The second case was a pedigree third calf Friesian cow three months calved. The indications here were much more indicative of traumatic gastritis. Inappetence and diminished milk yield had been noticed for the first time the previous day. When seen the cow was grunting, the back was arched, elbows turned out and there was a distinct reluctance to move. Ruminal movements were absent and the temperature was 103·6° F. A pronounced reaction was obtained to the mine detector and this was loudest in the sixth intercostal space at the left border of the sternum.

Rumenotomy was performed the same afternoon, and two 2 in. wire nails were removed from the reticulum, one lying free and the other embedded to a depth of about ¼ in. in the ventral wall.

Trial 3.—It was realized that a proportion of apparently normal cows harbour harmless pieces of metal in the reticulum and might also give a positive reaction; tests were therefore carried out on two small herds. In all, 32 animals were tried, ranging from first calf heifers to cows of ten or eleven years. Ten cows gave reactions, eight marked and two slight.

The scope of experiments carried out to date (March, 1946) is insufficient to allow any definite conclusion to be drawn, but it is considered that results are of sufficient interest to warrant further trials. It is hoped that opportunity will occur in the next few months to pursue the investigations more fully, and results will be published in due course.

I would like to acknowledge the assistance received from detailed reports of Lt.-Colonel G. V. Short, M.B.E., R.A.V.C., on the experiments carried out in South-East Asia, and from Mr. H. I. Hiles, M.R.C.V.S., of Worcester, in whose practice occurred the two cases described, and who successfully performed the subsequent operations.

PENICILLIN IN MASTITIS

"The most effective manner in which to employ penicillin in the treatment of mastitis may not yet have been discovered," states *Veterinary Medicine* in its issue of December, 1945, "but the consensus at present seems to be to inject 12,000 to 20,000 units per quarter after complete milking. Both the severity of the case and the size of the udder have a bearing upon the dosage. In very large udders in which the attack is acute and severe, some deem as much as 50,000 units per affected quarter desirable. Where the injection is to be repeated opinions differ; some give the injections at two- or three-day intervals, but the majority favour injection at consecutive milkings, *i.e.*, twice daily until five injections have been made. Aqueous solutions are preferred to oily injections by the majority of users."

ANNOTATION

Penicillin and its Use in the Treatment of Mastitis

The discovery by Fleming[1] that the fungus, *Penicillium notatum*, produced a diffusible substance capable of inhibiting the growth of other organisms was a noteworthy advance in our knowledge of the "antibiotic" substances.

Despite the fact that this observation was made in 1929, however, the therapeutic value of penicillin was not explored until the Oxford group of workers (Chain, Florey, Gardiner and Heatley) in 1938[2] demonstrated the therapeutic value of penicillin in mice injected with lethal doses of *Staph. aureus, Str. pyogenes* and *Cl. septique*. At this time also there was a renewed interest in the application of these substances for therapeutic purposes, particularly following the isolation of tyrothricin by Dubos[3] from the soil bacillus, *B. brevis*. Further, the whole field of chemo-therapeutic research received an impetus following Domagk's discovery of prontosil.

It must be pointed out, however, that Fleming's studies in 1932[4] had shown that organisms could be divided broadly into two groups according to their sensitivity to penicillin *in vitro* and that those pathogenic for man which were susceptible to its action, included the streptococci, pneumococci, corynebacteria and clostridia. On the other hand, Fleming found that organisms of the typhoid, haemophilus and brucella species were insensitive. These original observations on the sensitivity of organisms were carried out with a broth filtrate and it awaited the work of Clutterbuck, Lovell and Raistrick[5] in 1932 to develop methods of preparation and chemical extraction of penicillin. These investigations were fundamental to the future production of penicillin on a large scale and indeed indicated the stages in chemical extraction which the Oxford workers were to employ and perfect later.

Clutterbuck *et al.* showed that the antibacterial substance reached its maximum concentration about the 16th to 20th day when *P. notatum* was grown on a modified Czapek-Dox medium. After acidification to a *p*H of 2 the active substance could be extracted into ether but evaporation of the ether resulted in destruction of its activity. The Oxford workers[6] in continuing this method of extraction found that stable salts of penicillin could be prepared by shaking the ether solution with dilute aqueous alkali. Penicillin was, therefore, found to be an unstable acid and the preparations used in therapeutics are its salts. The sodium salt employed for systemic treatment in man is hygroscopic and somewhat less stable than the calcium salt; it is rapidly destroyed by acids and alkalis and loses activity when heated above body temperature. It is recommended, therefore, that tablets and particularly solutions should be stored at a temperature not above 4° C. Potency of penicillin is expressed in Oxford units, a unit being defined as the amount of penicillin which when dissolved in 50 ml. of meat extract broth, just inhibits completely a test strain of *Staphylococcus aureus*. The pure substance would have a potency of 1,000 units per mg.; that in present use has not been obtained in this state of purity since only 20 to 50 per cent. of the final dried material is pure penicillin. This product, however, represents a great improvement on that originally used in therapeutic trials by Florey and his colleagues. They found that the impure material was relatively innocuous for mice and that leucocytes and tissue cultures withstood many hundred times the concentration needed to inhibit such organisms as the streptococcus. They also investigated the methods by which penicillin is absorbed and excreted after injection into experimental animals and in man. It was present for a short period of about three hours in the blood following oral, subcutaneous and intravenous administration and 50 per cent. was excreted in the urine whatever the route of injection.

In the first clinical trials in man the Oxford workers[6] demonstrated the therapeutic effectiveness of the drug by both systemic and local administration. The cases chosen for treatment were pyogenic infections and the mode of treatment chosen was by the intravenous route using a "continuous drip" infusion of saline. Of 200 such cases, 143 showed complete recovery when the criteria of cure were assessed on bacteriological data. About the same time also, 150 cases of burns were treated by Clark *et al.*[7] and they showed that no staphylococcus or streptococcus infection of a burn failed to disappear under adequate treatment. Work in the U.S.A. has confirmed and amplified the British results mainly in systemic treatment (Keifer *et al.*).[8] In neither the British nor the American series did recovery occur in subacute bacterial endocarditis (*Strep. viridans* infection), even after prolonged treatment, but in a recent trial instituted by the Medical Research Council and reported by Christie[9] apparent cure was obtained in 75 per cent. of cases; the dosage employed was 500,000 units for four weeks.

During the war, the available supplies of penicillin were in the main directed towards combating wound sepsis and the earlier results in the North African campaign have been reported.[10] They demonstrate that contaminating bacteria were eliminated in two or three days, though failure in recovery did occur when gram negative bacteria were present.

The action of penicillin on susceptible organisms has generally been understood to be bacteriostatic in that it merely inhibited the growth of organisms and did not kill them quickly in the same way as antiseptics like proflavine. This bacteriostatic effect was reflected in the morphologicad changes undergone by sensitive bacteria grown in its presence where, by interference with division, giant forms are produced. Early preparations inhibited several species of bacteria, including *Staph. aureus* at a dilution of $1:10^6$ and the gonococcus at $1:2\times10^6$. A staphylococcus strain, when repeatedly subcultured in medium containing penicillin, became rapidly resistant and this was not due to the elaboration of an enzyme capable of destroying penicillin.

The Oxford workers showed that the action of penicillin differed from that of the sulphonamides by being (1) active at a much higher dilution, (2) unaffected by the numbers of bacteria present, (3) not interfered with by the presence of serum, pus, autolysed tissues or peptones.

More recent studies on the mode of action of penicillin *in vitro* have shown that the drug has bactericidal properties under certain conditions. Hobby *et al.*[11] showed that young cultures in the stage of active multiplication are more susceptible to the bacteriolytic action of penicillin than old cultures while Rantz and Kirby[12] and Todd *et al.*[13] demonstrated that organisms multiplied up to a period of six hours but were completely lysed by 20 hours. By including a growth-promoting substance like serum, the rate of lysis was increased.

The published experimental work on the value of penicillin in the treatment of bovine mastitis is limited to that quoted by American and Canadian workers though the use of the drug in this direction was explored as early as 1943 in this country. Unfortunately, no publication has so far emanated from British workers except for a brief note published recently which showed in tabular form the success obtained with various doses in sterilizing *Str. agalactiae* infection. A great deal more fundamental work than this has been done, however, not only in selecting dosage for this form of the disease but on its use for treatment of *C. pyogenes* and staphylococcus infections while experiments on the absorption, excretion and toxicity of the drug in the cow have been carried out. At first, the preliminary work was curtailed by the limited supply of penicillin permitted for animal experimentation but with the more plentiful supplies recently made available, this handicap is being largely overcome.

The first published account of the value of penicillin was made by Kakavas[15], who confirmed the previous findings of British workers regarding the irritative properties of unpurified penicillin for the bovine udder though it possessed bactericidal properties, particularly against streptococcus infection. On the other hand, the purified sodium salt was well tolerated and even moderate dosage, about 10,000 units per day, gave successful results. These results were confirmed by Bryan *et al.*[16] who also found that doses containing up to 400,000 units were practically without effect on the character of the milk while the milk yield was reduced by one-third for one day only. It is not clear, however, whether this loss was due to the volume of vehicle used for infusion. These workers claimed that 22 out of 30 cows infected with *Str. agalactiae* were cured by one injection of 5,000 to 12,500 units. Slanetz and Allen[17] found that 15 out of 18 quarters belonging to ten cows affected by *Str. agalactiae* could be cured with one injection of 100,000 units in 100 c.c. of saline, while four injections were required for staphylococcus infection.

Murphy and Pfau[18] however, found that a single injection containing as high as 200,000 units gave poor response but that infection was eliminated by five doses of 10,000 units in six out of ten quarters, while five doses of 20,000 units gave a complete response in 32 infected quarters. Barker[19] also found that a single injection of 25,000 units effected no more than a 50 per cent. cure.

That pathogenic staphylococci, on the other hand, are more difficult to eliminate from the udder than streptococci, has been shown by these workers and also by Klein[20] who found that they could only be temporarily reduced in numbers by 6 to 12 hourly injections of 22,000 units administered on eight occasions. It was found that penicillin exerts an antibacterial action for 12 hours in infused quarters.

That the volume of diluent in which the penicillin is infused into the udder may influence the results obtained has been noted by Byrne *et al.*[21] who found that 40,000 units in 100 c.c. diluent gave better results than the same dose in a smaller volume. These results, however, are subject to the criticism that injections were not repeated daily.

The administration of penicillin for treatment has been carried out by infusion into the udder but attempts have been made to test its efficiency after intravenous injection. Bryan *et al.*[16] found that no success in eliminating streptococcus infection of the udder of one cow followed a dose of 200,000 units while Barker and Dussault[22] concluded that the mammary gland was not permeable to penicillin after intramuscular injection in a wax-oil base.

From the summarized report presented by British workers[23] on the value of different doses of penicillin tested on 271 cows affected with *Str. agalactiae*, it is clear that a single dose did not give such good results as smaller repeated doses. It was found that two injections of 20,000 units at daily intervals gave an 80 per cent. response while half this dose given after four successive milkings gave a slightly better result. These findings, along with those previously reported, lead to the conclusion that to attain maximum success with penicillin therapy in mastitis, as has been shown in chronic human pyogenic infections, the important principle is to maintain a concentration of the drug for a sufficiently long period to enable it to exert its full bacteriostatic action. Further experimental work should, therefore, be conducted with a view to ascertaining (*a*) the minimal dose which provides a residual concentration in the milk at the times selected for injection, (*b*) to determine the factors which may influence such retention, such as yield of milk and the extent of disease.

S. J. E.

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ABSTRACTS

[The Relationship of Dosage and Site of Inoculation to the Agglutinin Response to *Brucella Abortus* Strain 19 Vaccine: A Comparison of the Subcutaneous, Intracutaneous and Intracaudal Routes. CAMPBELL, R. D., and RODWELL, A. W. (1945.) *J. comp. Path.* **55.** 277-289. (8 refs.).]

In Australia the approved scheme, which is already beginning to be applied, embraces the immunization of not only calves but also cows with *Br. abortus* strain 19 vaccine prepared and inoculated according to the U.S. official method. In view of the considerable local and general reaction, evidenced by temporary drop in milk yield, when the method is applied to cows, the authors undertook to determine whether the dosage might be reduced and whether the site and route of inoculation might be modified in order to prevent these untoward occurrences. They assumed that the agglutinin response may be taken as a measure of the immune response for the purpose of their comparisons. Inoculations by the subcutaneous, intradermal (intracutaneous) and caudal routes were compared, using varying doses of vaccine. Groups of cows were inoculated subcutaneously with doses of 0·04, 0·2, 1·0 and 5·0 c.c. of vaccine (the last dose corresponding to the standard American method). Other groups were inoculated with 0·04, 0·2 and 1·0 c.c. intracaudally and 0·2 c.c. intradermally. One hundred and seven cows and 36 heifers were used for these experiments and the maximal mean titres of their sera 14 days after inoculation were compared statistically. They found that 1·0 c.c. intracaudally produces a greater agglutinin response than 5 c.c. subcutaneously: it is also more economical and causes no greater milk diminution. Doses of 0·2 c.c. or even 0·04 c.c. intracaudally appear to be at least as efficient as 5·0 c.c. subcutaneously or 0·2 c.c. intradermally, but their effect on the milk yield was not examined. Local reactions

following either intracaudal or intradermal reactions were unimportant. Brucella organisms were not found in the milk of cows vaccinated subcutaneously or intracaudally.

A. W. G.

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[**Staphylococcosis in Geese.** Rowlands, W. T., and Smith, H. W. (1945.) *J. comp. Path.* **55**. 125-131.]

Four widely separated cases were investigated in North Wales. The disease appears either in an acute form, terminating fatally in two to three days or in a chronic form lasting two to three weeks and followed by slow recovery or a relapse and death.

In the *acute* type there were either no symptoms or they were confined to lameness in one or more joints (wings or legs). The joints were slightly swollen, hot and painful. Diarrhoea was constantly present. The *chronic* form was characterized by extreme emaciation, anaemia and lameness with infection localized in one or more joints: diarrhoea was not so marked. In the majority of cases small black scabs were present on the under side of the webs, which are considered to be the portal entry.

The *post-mortem* examination of *acute* cases showed that the synovial capsule was much extended with a thin white exudate. In *chronic* cases a large amount of fibrous tissue was usually found around the joints, while the articular surfaces were sometimes necrosed. Abscesses were sometimes found in the tendon sheaths and around the joints.

A staphylococcus (biochemical data given) was isolated from the heart blood, spleen, bone marrow and liver. The subcutaneous injection of 1 c.c. of formalinized culture gave some protection. The authors consider that birds can become carriers and so serve to spread the disease.

N. S. B.

REVIEW

["**Bioenergetics and Growth.**" By Samuel Brody, of The College of Agriculture, University of Missouri. Published by The Reinhold Publishing Corporation, New York. Price $8.50.]

This book concerns itself with the quantitative aspects of energy and nitrogen metabolism, nutrition, various phases of growth, development and ageing, with the underlying catalysis of these processes, the energetic efficiency and profits of milk, meat and egg production and with the performance of muscular work. It is not easy to read, being interspersed with mathematical studies of the problems being examined, but the searching analysis and the conclusions arrived at will repay the concentration necessary to follow the text. The book includes many original studies made by the Missouri school.

The efficiency complex is viewed from four standpoints, that of the animal, that of the animal husbandman, that of immediate efficiency and that of long range efficiency. The study begins by emphasizing the "thermodynamic uniqueness of the agricultural industry in that it increases the local available free energy for man's use by utilizing the solar radiant energy which would otherwise be lost." In analysing the utilization of food for energy purposes it is concluded that nearly one quarter of the nutrients oxidized in an animal working at top speed may be recovered in the form of useful mechanical work. In considering productivity it is concluded that the gross efficiency of growth, including the maintenance complex, is 60 per cent. for prenatal growth, 35 per cent. for early post-natal growth, 5 to 10 per cent. for beef production in later ages, nearly 16 per cent. for egg production and about 33 per cent. for milk production. The older the animal the greater the maintenance tax in comparison with the productive efficiency. It is indicated that the profit complex, which involves overhead expenses such as human labour, housing, etc., may be affected by the size of the animal, but that this factor of size does not affect physiological efficiency, other things being equal. The net energy value per unit feed is not necessarily constant, however, but varies with the plane of nutrition of the animal and other factors.

A lengthy but useful section is devoted to a discussion of the metabolic catalysts—enzymes, vitamins, minerals and hormones—and their roles in the efficiency complex. Emphasis is placed upon the inter-relations between the exogenous catalysts (the vitamins) and the endogenous catalysts (the hormones) and particularly upon the danger of disturbing the hormonal balance without full knowledge of what is happening.

Many other matters are discussed and examined at length, including such things as seasonal and diurnal rhythms, animal calorimetry, growth rates of individuals and of populations, specific dynamic action and other nutritional problems, but enough has been said to indicate the scope of the book.

As a searching book concentrating attention upon the fundamentals of animal nutrition and husbandry, it merits close attention. Its study should lead to improvements in practical methods.

QUESTIONS IN PARLIAMENT

Warble Fly

Sir Wavell Wakefield asked the Minister of Agriculture what steps he is taking compulsorily to enforce the Warble Fly (Dressing of Cattle) Order, 1936, in view of the much needed improvement in the quality of hide used in the repairing of footwear and also to prevent the present loss of meat and milk caused by the depredations of the warble fly.

Mr. T. Williams: The Warble Fly (Dressing of Cattle) Order of 1936 was suspended during the war and has not so far been reimposed, largely because of the shortage of labour and the difficulties under which farmers are still working. Suitable preparations for the destruction of warble fly maggots are, however, on the market, and stockowners have been advised, through the issue of Press notices by my Department, to treat all visibly infested cattle.

Sir W. Wakefield: Is the Minister aware of the great damage being done to hides by this warble fly. Cannot some incentive be given to farmers to stop the ravages of this pest?

Mr. H. Hynd: Will the Minister say whether the samples which have been circulated in this connection will make good tap washers?

Mr. Price: Can the Minister say whether there is a reasonable probability of all farmers having a chance to get this stuff?

Mr. Williams: Yes, Sir. I understand that ample supplies are available for this purpose.

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Soilless Cultivation

Mr. T. Smith asked the Minister of Agriculture how far his Department is directly responsible for research and experiments into hydroponics and other forms of soilless cultivation; and if he will publish the results in the form of a White Paper.

Mr. T. Williams: My Department does not itself undertake experimental work in soilless cultivation. This is carried out by research institutions and growers. Although a White Paper would not seem appropriate, I will arrange for the publication of an up-to-date review of the work undertaken in this subject.

Mr. Smith: Does not my right hon. Friend think that, in these days when the need for intensive cultivation is so widely necessary, his Ministry ought to be more directly concerned in these scientific matters?

Mr. Williams: No, Sir. I still think that this is a matter for the research experts and not for the Department.

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Poultry Food

Mr. Baker White asked the Minister of Food, in view of the crippling effect of the recent cuts in agricultural feeding-stuffs, particularly for poultry, what steps are being taken to increase imports of alternative feeding-stuffs such as maize and cotton-seed cake.

Dr. Edith Summerskill: Maize has been imported for feeding-stuffs, but such supplies as we secured have or are being released. I regret it will not be possible to secure the import of larger supplies as the stocks in exporting countries are being diverted for human food. Cotton-seed cake is not a suitable food for poultry. This commodity, in common with all oil seed cakes, is subject to Combined Food Board allocation and we are already obtaining our share.

. . . . .

New Agricultural Executive Committees (Scotland)

Replying to Mr. Henderson Stewart, Mr. Westwood, the Secretary of State for Scotland, said: Useful discussions have taken place with representatives of the industry and of the agricultural colleges, and, while there are some points still to consider, I can now give an indication of the organization which I propose to set up in Scotland in place of the existing agricultural executive committees.

First, I intend to establish in November ten area executive committees, each consisting of about 14 members. These members will be appointed by me after consultation with the representative organizations of owners, farmers and workers. For the most part they will have a practical knowledge of agriculture and will be drawn from the industry. These committees will be responsible for administering locally the Government's efficiency measures. They will take over the whole of the executive functions of the present committees and such other functions as may be assigned to them under the Government's agricultural policy. They will be responsible for so long as may be necessary for dealing with local matters such as the rationing or allocation of agricultural requisites, for example animal feeding-stuffs, and the provision, organization or administration of supply services, such as the tractor service and supplementary labour schemes. I propose that the latter duties, and any others which it may be found convenient to delegate, should be carried out by sub-committees with local headquarters in the districts of the present agricultural executive committees.

These sub-committees will be appointed, of course, by the area executive committees.

Second, when the necessary legislation has been passed I propose to set up local advisory committees, whose areas of operation will generally correspond to the districts of the present agricultural executive committees, charged with the duty of promoting, in collaboration with the agricultural colleges, the technical development of agriculture and estate management and the efficient use of land. Each committee will consist of about 12 members, and will represent both agricultural and educational interests, with some additional members appointed by myself. The purpose of my direct appointments will be to ensure that the committee is properly balanced and where necessary to improve its working efficiency. For instance, a specialist or expert, such as in suitable cases a horticulturist or poultry farmer, might form a very desirable addition to the membership of the committee.

Mr. Snadden: Will the Secretary of State make it clear whether the area executives are to be appointed solely by the Minister, which seems to be contrary to the policy followed in England and Wales?

Mr. Westwood: They are to be appointed solely by myself, but only after full consultation with the interests I have already referred to in answering the Question.

NOTES AND NEWS

Diary of Events

May 25th.—Annual and Scientific Meetings of the Nutrition Society (Scottish Group), in the East Medical Theatre, the Royal Infirmary, Edinburgh, 11 a.m.

May 28th.—R.C.V.S. Council Elections—Voting Papers to be returned.

May 29th.—Meeting of the Section of Comparative Medicine, Royal Society of Medicine, at the Veterinary Laboratory, Ministry of Agriculture, Weybridge, 2.30 p.m.

May 31st.—Annual General Meeting of the National Veterinary Benevolent and Mutual Defence Society, at Manchester (Grand Hotel), Aytoun Street, 3.30 p.m.

May 31st.—Meeting of the Sussex Division, N.V.M.A., at the Wellcome Research Station, Ely Grange, Frant, Nr. Tunbridge Wells, 11 a.m.

June 1st.—Meeting of the Society of Women Veterinary Surgeons, at the Conway Hall, Red Lion Square, London, W.C.1, 2.30 p.m.

June 4th.—R.C.V.S. Annual General Meeting.

June 4th.—R.C.V.S. Committee Meetings.

June 4th.—Annual General Meeting, Victoria Veterinary Benevolent Fund, 10, Red Lion Square.

June 5th.—R.C.V.S. Committee Meetings.

June 6th.—R.C.V.S. Committee and Council Meetings.

June 6th.—Visit of the Central Veterinary Society to Northaw and the White City (see Notice).

June 13th.—Summer Meeting of the South-Eastern Division, N.V.M.A., at the Wellcome Research Station, Ely Grange, Frant, Nr. Tunbridge Wells, 11 a.m.

The Following is the Provisional Programme for N.V.M.A. Council and Committee Meetings in June in Edinburgh

Wednesday, June 19th

11 a.m.—Finance and General Purposes Committee.

2.30 p.m.—Sub-committee on First Aid Handbook.

Thursday, June 20th

10 a.m.—Appointments Committee.

11.30 a.m.—Organising Committee.

2.15 p.m.—Joint Veterinary Officers, Public Health and Parliamentary Committee.

Friday, June 21st

11 a.m.—Council Meeting.

Would members wishing accommodation reserved in Edinburgh hotels notify the General Secretary, N.V.M.A., 36, Gordon Square, W.C.1, *without delay*, giving dates.

June 27th.—R.C.V.S. Written Examinations begin.

July 1st.—R.C.V.S. Oral and Practical Examinations commence.

Sept. 23rd-27th inclusive.—Annual Meeting and Conference of the National Veterinary Medical Association of Great Britain and Ireland, to be held in London.

Note.—The meeting of the Section of Comparative Medicine to be held on May 29th will take place at the Veterinary Laboratory, Ministry of Agriculture, Weybridge, and not at 1, Wimpole Street, W.1, as stated in our issue of May 18th.

Salaries of Veterinary Officers of the Ministry of Agriculture and Fisheries

A deputation from the Association, consisting of the President (Mr. G. N. Gould), the Senior Vice-President (Professor W. C. Miller), the President-Elect (Professor W. M. Mitchell) and Dr. W. R. Wooldridge, attended a conference at 23-25, Soho Square, on Friday, May 17th, to discuss proposals for the revision of salaries of whole-time officers of the Ministry's Animal Health Division.

It was with regret that the N.V.M.A. found itself forced to withdraw from the initial discussions on these proposals in view of the fact that they incorporated a fixed ceiling which precluded free discussion of this and other disappointing features.

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Brucella Abortus Infection in Cattle

Agglutination Tests

A recent meeting of the Finance and General Purposes Committee considered a communication from the Director of the Ministry's Veterinary Laboratory announcing the outcome of meetings between the Ministry and representatives of laboratories where agglutination tests are carried out. Agreement has been reached for the use of a standard suspension which will be supplied from Weybridge and used by a standard technique.

The diagnostic criteria have also been agreed upon. In reading the results using this antigen, only those samples in which there is no significant agglutination at the 1:10 dilution will be reported as having given a negative result. Agglutination to the extent of a 50 per cent. aggregation or greater at 1:10 and 1:20 will be reported as indefinite, agglutination at 1:40 being accepted as positive. This standard is slightly more severe than has been used by some laboratories in the past and will mean that a larger proportion of agglutination tests will be reported as indefinite.

Where the agglutination test is being carried out for control of abortion in a herd, the receipt of an indefinite result may be no great inconvenience since the practitioner will take his knowledge of the herd and previous tests into account and decide how to classify the animal. He can arrange that animals giving indefinite results (agglutination at 1:10 or 1:20) be retested with a view to defining their category definitely.

Difficulty will, however, arise in those instances in which the agglutination test has been made with a view to sale or vaccination against contagious abortion. In these instances the animal may only go forward if the practitioner can certify that it has *passed* the agglutination test. To meet this difficulty it has been agreed that animals which consistently agglutinate at 1:10 but not above be accepted as having passed the test. The minimum which is regarded as consistent in this respect is the showing of this level of agglutination at at least two tests, the interval between them being not less than two weeks and not more than four weeks.

The practical importance of this concession is that practitioners should advise their clients to have animals for which they wish a negative certificate tested well in advance; *e.g.*, at least four weeks before the date of the sale. Then, if the result of that test is indefinite and the agglutination not greater than 1:10, a second sample may be submitted for test before certification is due. If this second sample shows reaction at 1:10 only, or none at all, the practitioner is fully justified in issuing a certificate that the animal has passed the agglutination test.

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PERSONAL

Births.—Edwards.—To Vera, wife of F. V. Edwards, Morpeth, a son—Simon Grant.

Gates.—On April 17th, 1946, at Jos, Northern Nigeria, to Frances Charlotte, wife of G. M. Gates, M.R.C.V.S., a son—Richard Anthony.

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R.C.V.S. OBITUARY

Greeves, Derek, Captain R.A.V.C., Washway House, Holbeach, Lincs. Graduated London, July 6th, 1940. Reported missing 1944; officially presumed, May, 1946, to have been killed in action.

Mackenzie, Alfred, Tirveyne, Kingussie, Inverness-shire, and of The Lindens, Market Drayton. Graduated Glasgow, May 24th, 1888. Died May 7th, 1946.

Mr. Alfred Mackenzie, F.R.C.V.S.

It is with deep regret that we have to record the death on May 7th, at Tirveyne, Kingussie, Inverness-shire, of Mr. Alfred Mackenzie, F.R.C.V.S., of "The Lindens," Market Drayton. Mr. Mackenzie, who was in his 80th year, was widely known over the

Midlands, having practised as a veterinary surgeon in Market Drayton for over 50 years. He was held in the highest esteem as a man of the finest integrity and he was a skilled surgeon whose services were frequently sought by all classes and whose good nature and benefactions were a boon to the district. Mr. Mackenzie retired in 1940, since when he lived in Scotland, but his name will always be associated with Market Drayton. Until the outbreak of war Mr. Mackenzie was chief veterinary surgeon to the International Horse Show at Olympia and he was also chief veterinary surgeon to the Hackney Society and to the Shropshire and West Midlands Agricultural Society. He always took a keen and practical interest in all matters appertaining to his profession and he was Past President of the Midland Veterinary Medical Association and in addition served for many years on the Council of the Royal College of Veterinary Surgeons. He leaves a widow and two daughters to whom the deepest sympathy will be extended.

The funeral took place on Friday, May 10th, at Kingussie, when in addition to the family mourners many friends attended to pay their last tribute to a beloved friend and many beautiful floral tributes were sent.

* * * * *

INTERNATIONAL CONFERENCE OF AGRICULTURAL PRODUCERS

Representatives of 31 nations were present at a reception given by the National Farmers' Unions of the United Kingdom to the International Conference of Agricultural Producers on Monday last.

Among those also present were the Rt. Hon. Ernest Bevin, Foreign Secretary, the Rt. Hon. Tom Williams, Minister of Agriculture; Rev. the Rt. Hon. R. Moore, Ministry of Agriculture for Northern Ireland; Earl De La Warr, Viscount Bledisloe, Lord Courthope, Lord Horder, Colonel the Rt. Hon. Walter Elliott, the Rt. Hon. R. S. Hudson, Sir D. Vandepeer, Mr. R. H. Franklin, Professor W. Drummond, Sir Thomas Baxter (Milk Marketing Board), Sir Norman Vernon, Mr. R. W. Haddon, Mr. Messer, Mr. G. N. Gould (President, N.V.M.A.), and Lt.-Colonel H. A. Reid.

In his brief and pointed toast to "International Co-operation," Mr. James Turner, President of the National Farmers' Union of England and Wales, said that it was most appropriate that the Food and Agriculture Organization should be the first specialist agency to be set up by the United Nations Organization as a sign of the growing consciousness of Governments of the importance of food, and now the producers, by their presence at the Conference, were indicating that the men who must "keep the larder full" readily accepted their heavy responsibility to mankind.

Mr. Bevin, replying, believed that the steps now being taken "would beat the famine" in the East this year; at least, starvation had been arrested. He pointed out that those participating in the Conference had more power in their hands than any statesmen to produce a world of plenty and the obliteration of war.

Count van Lynden van Sandenburg responding to the toast "Our Guests," remarked how greatly the visitors had been impressed, and amazed by "the big job of farming Great Britain had been doing during the past six years."

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ADDRESSES OF DISEASE-INFECTED PREMISES

The list given below indicates, first, the county in which are situated the premises on which disease has been confirmed, followed by the postal address and date of outbreak.

Swine Fever:

Gloucestershire.—Warren House, The Cloisters, Winterbourne, Bristol, Glos. (May 18th).

Hertfordshire.—Lea Farm, Garston, Watford, Herts (May 14th).

Isle of Ely.—Hulwood Farm, Somersham Road, Chatteris, Cambs. (May 20th).

Leicestershire.—King's Head Hotel, Melton Mowbray, Leics. (May 18th).

Lincs. (*Kesteven*).—Grove Farm, Claypole, Newark, Notts. (May 17th).

Lincs. (*Lindsey*).—Manor Farm, Stallingborough, Grimsby, Lincs. (May 18th).

Stirlingshire.—Westfield Farm, Torrance of Campsie, Stirlingshire (May 18th).

Orkney.—Carmath Farm, Carness, St. Old, Kirkwall, Orkneys (May 15th).

Surrey.—Mickleham Hall Stables, Mickleham, Dorking, Surrey (May 15th).

VACCINATION AGAINST JOHNE'S DISEASE

The Agricultural Research Council has decided to initiate experiments in vaccination against Johne's disease.

Because of the nature of the disease and the absence of a satisfactory diagnostic test a period of years must elapse before conclusions can be formulated. It is, therefore, proposed that, in addition to carefully controlled experiments which are being designed separately, vaccine should be made available for use in selected herds without imposing such experimental restrictions as would interfere with normal farming operations. The Ministry of Agriculture and Fisheries has agreed to co-operate with the A.R.C. in conducting this field trial.

The vaccine consists of a suspension of living *M. johnei* with pumice in oil. It is injected subcutaneously in 2 c.c. doses, resulting in the formation of a localized nodule which usually persists for some years. From observations in France and in this country there is strong evidence that vaccination is harmless. There are indications that it confers a useful degree of resistance to natural infection. It is proposed to vaccinate calves only, as soon as possible after birth and not later than one month old; older cattle in infected herds might have contracted natural infection before vaccination and clinical cases occurring in such animals if they were vaccinated would tend to confuse the results obtained and bring the vaccine into disrepute. The present intention is to revaccinate at intervals of 12 to 18 months.

Vaccination causes a marked sensitivity to tuberculins, and, as it is proposed to revaccinate from time to time, such sensitivity may persist throughout the life of an animal.

In herds which are regularly tested it is desirable that the state of the herd in relation to the comparative tuberculin test should be recorded shortly before vaccination commences. In the few attested herds which have already been vaccinated there is no indication that it will be difficult to differentiate, by the comparative test, between the sensitivity induced by the vaccine and sensitivity resulting from tuberculous infection of the bovine type. In herds which are not regularly tested it will be an advantage to know the result of a comparative test before vaccination, but this will not be made a condition of acceptance of the herd for inclusion in the experiment.

The object of the field trial is to observe the effect of vaccination on the incidence of the disease in herds over a period of years. Herd history will provide the criterion for judging results in conjunction with the other set of controlled experiments. Herds will not be accepted unless:—

(*a*) existence of the disease is reasonably established;
(*b*) recruitment is mainly from calves born and reared on the premises;
(*c*) vaccinated calves can be identified individually by number.

Owners will be expected to notify births promptly and to co-operate in affording facilities for clinical and *post-mortem* examinations as occasions arise.

It is anticipated that vaccinations will normally be done by the owner's veterinary surgeon, to whom the Ministry will pay a fee of 10s. 6d. for the first calf and 2s. 6d. per head for additional calves vaccinated at each visit made for vaccination, plus mileage on the usual scale. Vaccine will be distributed through the Ministry's Divisional Inspectors, who will also be responsible for keeping the necessary records.

An invitation to owners with suitable herds to apply for inclusion in the field trial is being issued shortly through the agricultural Press. Veterinary surgeons who encounter the disease in their private practices are requested to assist at this initial stage, by bringing the proposals to the notice of their clients and advising both them and the Ministry's field staff as to the suitability of particular herds for experimental vaccination. Further information can be obtained from the Ministry's Divisional Inspector.

On receipt of an application by an owner for admission to the trial, the Divisional Inspector will arrange a detailed enquiry as to the suitability of the herd. Vaccine can only be supplied for use in herds which, following such enquiry, are accepted as suitable for experimental observation.

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Mr. H. W. Steele-Bodger, M.R.C.V.S., Tamworth, a past President of the N.V.M.A., will deliver his next paper before the Farmers' Club, 3, Whitehall Court, S.W.1, on June 3rd, and will take as his subject "A National Policy for the Control of Animal Diseases."

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The National Federation of Meat Traders has appointed Mr. A. J. Jackson (who has been Acting Secretary for six months) as its General Secretary in succession to the late Mr. W. G. T. Blois, O.B.E.

R.C.V.S. ANIMAL MANAGEMENT EXAMINATION

LIST OF SUCCESSFUL CANDIDATES

LONDON:

Archard, M. V.
Ayre-Smith, R. A.
Bainbridge, J. G.
Batt, P. R.
Boughton, A. R.
Bowen, D. L.
Briault, M. O.
Butler, G. A. F.
Chittenden, Miss P. M.
Clark, M. A.
Clifford, R. M.
Collings, D. F.
Craven, J. R. (Credit).
Davey, T. E. L.
Dick, D. C. (Credit).
Fox, R. C.
Gilbert, G. A.
Griffith, K. P.
Groll-Mason, Miss R.
Hardy, Roger.
Hickman, S. J. H.
Holt, J. R.
Hollands, R. D.
Hopkin, A. E.
Hurst, P. E.
Jenkins, O. D.
Metivier, H. N.
Moggridge, Miss E. D.
Morris, R. E. (Credit).
Mulcair, T. B.
Muse, Herbert.
Oldham, J. G.
Owens, E. L. (Credit).
Pengelly, James (Credit).
Perrin, Miss P. E. V.
Phillips, J. G. (Credit).
Pretty, Miss Y. I.
Pugh, P. D. S. (Credit).
Rhodes, John.
Richardson, John (Credit).
Roberts, L. W.
Robinson, C. E.
Ryde, P. S. (Credit).
Siebert, W.
Sladden, I. E. T.
Stanislas, Ian.
Stockman, M. J. R.
Stokoe, H. P.
Stratton, John.
Tebbutt, N. F.
Toosey, M. B.
Vaughan, L. C.
Weaver, Miss B. M. O.
Webster, A. A. (Credit).
Williams, K. R.
Wootton, J. C.
Yeats, J. J. (Credit).

EDINBURGH:

Auchterlonie, David.
Baker, F. C.
Bayliss, John.
Brooks, C. R.
Brown, C. W.
Edgar, D. G. (Credit).
Goodhand, R. H.
Loxam, J. G.
Mackenzie, R. L.
Millar, M. W.
Miller, A. H.
Minnis, J. S.
Murphy, Stanley.
Rayne, Philip.
Reid, G. M.
Ruddock, C. P.
Seamer, J. H.
Siller, W. G.
Slinger, Gerald.
Steele-Bodger, Alastair.
Stewart, G. H. G.
Stirling, L. R.
Thomson, G. G. (Credit).
Wilson, William.
Wood, Colin.

GLASGOW:

Barclay, J. M.
Bennett, I. R.
Beresford-Jones, W. P.
Boyd, R. P.
Drummond, Miss C. P.
Filshie, H. P.
Garrett, J. A. L.
Hall, T. P.
Heyworth, Brian.
Horn, W. R.
Irvine, A. J.
Irvine, G. B. (Credit).
Lindsay, T. P.
McAdoo, S. D.
Mackie, A. M.
MacLennan, Donald.
Russell, David.
Spence, Norman (Credit).
Strang, A. L. D.
Swift, A. G. (Credit).
West, W. R. G.
White, Miss C. H.
Wilson, A. G.
Wilson, R. L.
Wright, E. D.

(To be continued)

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STUD GOAT SCHEME, 1946-47

The purpose of the scheme is to improve by means of breeding the standard of milch goats kept by smallholders, cottagers and other persons of similar position. The scheme will operate during the forthcoming breeding season which will extend from September 1st, 1946, until the end of February, 1947. Stud goats used must have been entered, or be eligible for entry, in the British Goat Society's Herd Book and must have been bred from milk producing stock. Owners of milch goats as indicated above may obtain the services of approved stud goats at a fee not exceeding 5s. per service. It is expected that the owners of goats served will normally rear the female kids.

The scheme will be administered by the British Goat Society under the approval of and with financial assistance from the Ministry of Agriculture and Fisheries, and stud goat owners should apply for particulars to the Secretary to the Society, The Cottage, Roydon, Diss, Norfolk.

Applications for approval of stud goats under the scheme must be received not later than May 20th, 1946, and the goats submitted for approval must be available for inspection by an officer of the Ministry of Agriculture and Fisheries after that date at the premises at which it is proposed that they should stand at stud.

CORRESPONDENCE

The views expressed in letters addressed to the Editor represent the personal views of the writer only and must not be taken as expressing the opinion or having received the approval of the N.V.M.A.

Letters to the Editor should reach the Office not later than by the first post on Monday morning for insertion in following Saturday's issue.

Notice to Correspondents

The Editorial Committee regrets that, the paper supply situation having deteriorated, it has become necessary to ask correspondents again to accept a limitation on the length of letters submitted for publication. Accordingly, contributors to our Correspondence Columns are requested to note that, until further intimation is made, their communications must not exceed 350 words.

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MILK LOSS THROUGH CATTLE DISEASE

Sir,—In a letter published in a recent edition of *The Veterinary Record* Mr. J. Tweedale Edwards refers to our lack of authentic information concerning "loss from livestock disease," and states that "another undeveloped source of information is the livestock insurance record," citing Sweden as an example.

May I point out in this connection that this matter was dealt with at some length in my address before the Public Health Congress at the University of Ghent some 20 years ago. You were good enough to refer to this address in your editorial column in the following terms:—

". . . From the commercial side, then, there is no doubt as to the advantages of insurance. But what is of even greater interest to our profession as one concerned with disease, is the issue raised by Dr. Share Jones as to the contribution that could be made by a national system of livestock insurance to the cause of preventive medicine as a whole—a view put forward for the first time. Here our profession could be of direct scientific service and could perform national work of the highest order."

The subject has been raised by myself on many occasions since—notably at Dublin, Bristol and at our own International Conference in 1928, and one of the main reasons advanced for the institution of such a scheme was that it would provide reliable statistics concerning disease which we are at present without. Moreover, the Council of the R.C.V.S. has had under consideration the question of a general and compulsory system of animal insurance and adopted the following resolution on my proposal:—

"That, having regard to the general tendency now prevailing towards the adoption of the principle of insurance as a means of relieving individuals of risks of various kinds the time is ripe for serious consideration to be given to the question of establishing a general system of insurance of the domestic animals."

Reference to the Register (1944) will show details of the subjects that should be considered under this scheme.

A Committee was appointed to give preliminary consideration to the question and following its report the Council passed: (1) that the scheme should embrace all domestic animals; (2) that the scheme should be compulsory; (3) that the State and owners should be contributors.

Yours faithfully,

Pentrebychan Hall, Nr. Wrexham. J. SHARE JONES.
May 17th, 1946.

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RE-VACCINATION OF CATTLE WITH STRAIN 19

Sir,—I am writing to ask if it would be possible for an authoritative opinion to be given with regard to the re-vaccination of cattle with the official abortion vaccine, strain 19.

At the moment there seems to be some diversity of opinion both in veterinary and farming circles as to whether re-vaccination is desirable or necessary, and if the latter how often it should be carried out.

Yours faithfully,

The Hollies, New Street, Wells. DENIS NICHOLSON.
May 12th, 1946.

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TUBERCULIN TESTING

Sir,—I think Major Rabagliati has raised a good point when he suggests that, where there are a large number of reactors at a private test, all adult stock should be removed before proceeding with attestation.

But such a drastic policy does not find favour with the majority of farmers; hence their unwillingness to go in for attestation.

I am still not clear why, after all reactors have been removed at a private test, the Ministry's test—first assisted test—should produce a further number of reactors.

Yours faithfully,

Fairfield, Cockton Hill Road MICHAEL SEARLE.
Bishop Auckland.
May 12th, 1946.